

OPERATIONAL LIMITS.

- Maximum Operating Altitude 31000 ft pressure altitude.
- Airport pressure altitude: -1000 to +8000 feet (for ENG ANTI-ICE ON, see AFM).
- Maximum runway slope: -2.0 % to +2.0 %.
- Maneuvering load factors:
 - Flaps retracted: +2.5 to -1.0
 - Flaps extended: +2.0 to +-0.

Minimum flight crew: 2 pilots.

FLIGHT DIRECTOR.

Go-around (GA) mode not authorized for take-off.

Do not use Flight Director commands as the only source of information.

AUTOPILOT.

Minimum Use Heights (MUH):

- After take-off: 200 ft AGL (Above Ground Level)
- In cruise: 500 ft AGL
- Coupled approach (Cat I): 100 ft AGL ("Coupled approach" = Autopilot coupled to localizer and glideslope).
- Non-coupled approach: 130 ft AGL

Back Course mode is not approved for use.

The radio altimeter on the same side as the selected FD must be operating for coupled approach.

Max crosswind component for coupled approach (Cat I): 26 knots.

The aircraft must be trimmed in roll before autopilot engagement.

Before final approach, after initial flap extension, disengage the autopilot if engaged, trim the aircraft in roll, and reengage the autopilot.

SSR MODE S ENHANCED SURVEILLANCE OPERATIONAL LIMITATIONS.

The Mode S system with Mod. No. 6249 (Enhanced Surveillance) installed satisfies the data requirements of ICAO Doc 7030/4, Regional Supplementary Procedures for SSR Mode S Enhanced Surveillance in designated European airspace. The capability to transmit data parameters is shown in the table below.

Parameter	Available / Not Available
Magnetic Heading	Available
Indicated Airspeed	Available
Mach No	Available
Vertical Rate	Available
Roll Angle	Available
Track Angle Rate	Not Available
True Track Angle	Available
Ground Speed	Available
Selected Altitude	Available
Barometric Pressure Setting	Available

ALTIMETER OPERATIONAL TOLERANCES.

Deviation from true altitude at ground check and difference between the Left, Right and Standby indicators according to national regulations.

Certification tolerances for the altimeters are according to TSO C10b. Manufacturing tolerances are according to the TSO for the standby altimeter but tighter for the ADCs (see tables below).

To determine an operationally acceptable difference between the left and right system the tolerance level provided by the EFIS MISCOMPARE caution (which is in between the TSO and the manufacturing tolerance level) provides a good means of determining whether any of the main systems is at fault. This level can be considered as an operational "max split" level for the left and right system.

If there is a good agreement between the two main altimeters, this altitude can be considered as the actual altitude, which then can be used to judge whether the standby altimeter is within acceptable limits by adding the position error and allowing for the standby altimeter tolerances.

If on the other hand the main systems do not agree (could even be close to the "miscompare" limits) they are no good for judging whether the standby altimeter is within acceptable limits. A simple "max split" table can not fully cover all these aspects and the table below is therefore based on actual altitude.

Left and Right Altimeter			Standby Altimeter			
Actual Altitude (ft)	Manufact. Tolerance	Diff. at EFIS Caution	Approximately Uncorrected Position Error at:			Manufact. Tolerance
			100 kts	200 kts	270 kts	
0	± 20	60	10	40	70	± 20
10 000	± 20	100	20	50	120	± 80
20 000	± 20	150	30	80	150	± 130
30 000	± 20	190	50	120	230	± 180

NOTE

The above table must be considered as a guideline only. For correct Position Error Corrections and subsequent determination of actual altitude/possible failures, the AFM data and procedures must be used.

NOTE

Tolerance requirements stated by local regulations may differ from the above.

NOTE

Normal hysteresis and effects caused by friction inside the pneumatic/mechanical standby altimeter must also be considered. Hysteresis can be up to 75 ft at altitude. Therefore several readings should be taken in order to minimize this effect. If a reading appears to be marginal, allow at least five minutes at the actual altitude before a reading is noted.

AIRSPEED INDICATOR OPERATIONAL TOLERANCES.

Difference between the Left, Right and Standby indicators according to national regulations.

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1. ATTITUDE AND HEADING OPERATIONAL ACCURACIES

AHRS

– Pitch	0.5° Steady flight	
	1.0° Maneuvering	
– Roll	0.5° Steady flight	
	1.0° Maneuvering	
– Heading	1.0° Steady flight	(In NORM mode)
	2.0° Holding patterns	(In NORM mode)

2. AHRS INITIALIZATION

During AHRS initialization, the aircraft must not be moved.

3. OPERATION AT HIGH LATITUDES

AHRS computes aircraft magnetic heading by sensing earth's magnetic field. Aircraft operation at extreme north or south latitudes will cause degradation of the heading accuracies.

1. ATTITUDE AND HEADING OPERATIONAL ACCURACIES.

IRS.

- Pitch 0.1° (NAV MODE)
- Roll 0.1° (NAV MODE)
- Magnetic Heading 1.0° below $\pm 50^\circ$ latitude (NAV MODE)
3.0° worldwide except for areas near the north
and south poles.

2. IRS INITIALIZATION.

- Before takeoff the IRS must be initialized to correct present position.
- During IRS initialization, the aircraft must not be moved.

IRS initialization is not possible N of 82° latitude resp. S of -82° latitude or if IRS system temperature is below -40°C . Initialization time must be extended to 15 minutes between 73° and 82° (north or south).

3. POSITION ACCURACY.IRS ≤ 2 NM/hour.**4. MAGNETIC OR TRUE HEADING.**

Magnetic or true heading may be referenced in latitudes between $82,5^\circ\text{N}$ and $59,5^\circ\text{S}$. Only True heading is available at latitudes outside $82,5^\circ\text{N}$ and $59,5^\circ\text{S}$ and in the region north of $73,5^\circ\text{N}$, between $87,5^\circ\text{W}$ and $122,5^\circ\text{W}$.

1. STANDBY ATTITUDE AND HEADING OPERATIONAL ACCURACIES

Standby Horizon.

- Pitch 0.5° Steady flight
- Roll 0.5° Steady flight

Standby compass.

- After compensation 10° Steady flight

FMS OPERATIONAL LIMITATIONS.**Single FMS 4200 installation (Mod. No. 6088).**

1. The operational program status (832–4119–007) and correct data base must be verified on the FMS STATUS page before using the FMS. If the database is outdated, the position of all selected way–points and nav aids used must be verified for accuracy by reference to current approved data.
2. The FMS installation is certified in accordance with FAA ACs 25–15 and 20–129 and 20–130A. Provided usable signals are being received from specific navaid combinations, according to national regulations, the FMS meets the accuracy requirements for RNAV/B–RNAV enroute and terminal IFR operations, and Non Precision Approaches. Due to single FMS installation, an alternate means, appropriate for the route to be flown, must be available in case of FMS failure.
3. Before take–off, the FMS must be initialized to the correct present position.
4. The FMS must not be used outside the area covered by the loaded database.
5. During terminal area operation the non–piloting NAV SOURCE selector must be set in VOR/LOC mode.
6. Navigation must not be predicted on FMS use during periods of CDU yellow DISAGREE (DME–FMS, VOR–FMS, IRS–FMS, FMS–FMS or GPS–FMS) or DEAD RECKONING (DR) cautions. Whenever the above–mentioned cautions are annunciated, the position must be verified using basic radio navigation data (VOR/DME/NDB).
7. VNAV guidance and performance data must not be used as sole means. The information must be monitored against basic flight instruments and current approved performance data.
8. Although the 8.33 kHz tuning capability is available, it can not be used until the RTUs have been up–dated to 8.33 kHz tuning capability.
9. FMS must be operative when IRS is used at latitudes north of 82.5°N and south of 59.5°S and in the region north of 73.5°N, between 87.5°W and 122.5°W, in order to be able to change between True and Mag heading.

Global Positioning System, dual GPS if Mod No. 5490 and 5503 are installed.

1. The dual GPS system, software version –0224, is certified with reference to FAA AC 20–138 to the extent defined in Section 4/11.2 of the AOM, and limited to non–essential services. The equipment complies with TSO C–129, Class A2.

The system serves only as a backup navigation system to the IRS/FMS for long–range navigation.

The database currency must be checked before using the GPS.

Before flight, check GPS position to be within 0.2 NM of actual position.

When the GPS is used as backup for the IRS/FMS, FMS and GPS flight plans must be identical.

Sections 4/11.2 and 23/4.11.2 of the AOM shall be carried on board and be immediately available to the pilot.

2. The following Modes/Functions are not authorized to use:
CALC mode button with all functions.
3. The following Functions of the AUX mode button are not authorized to use:
CHECKLIST
SETUP

1. SYSTEM LIMITS.

- Max speed for flap extension See section 29, Speeds.

	Min	Normal	Max
1. OPERATIONAL LIMITS.			
– Minimum fuel for takeoff, each tank	TBD	–	–
– Maximum unbalance between tanks	–	–	135 kg/300 lbs
– Maximum altitude:			
5 JET A, JET A–1, JP–5	–	–	31 000 ft
– Fuel temperatures JET A	–37°C	–	+43°C
JET A–1, JP–5	–43°C	–	+43°C
NOTE: Mixing of different fuel types of the same category (kerosine) is permitted, provided that the most restrictive operational limit of the types is used.			
2. SYSTEM LIMITS.			
– Low level light	–	350 kg	–
	–	(436 L)	–
Without Mod. No. 5129:			
– Tank capacities, each tank (usable)	–	–	2125 kg/4685 lbs
	–	–	(2650 L)
– Total quantity of fuel (usable)	–	–	4250 kg/9370 lbs
	–	–	(5300 L)
With Mod. No. 5129:			
– Tank capacities, each tank (usable)	–	–	2128 kg/4692 lbs
	–	–	(2654 L)
– Total quantity of fuel (usable)	–	–	4257 kg/9385 lbs
	–	–	(5308 L)
3. FUEL QUANTITY INDICATION.			
Fuel remaining in the tanks when the fuel quantity indicators read zero in level flight can not be safely used in all flight conditions.			

	Unit	Min	Normal	Max
1. SYSTEM LIMITATIONS. – Windshield wipers.	KIAS			190
– De-ice boots.	Avoid boots operation at SAT below –40°C.			

	Unit	Min	Normal	Max
1. OPERATING LIMITS.				
Regarding speed limits for landing gear operation, for gear extended, and for max tire speed, ref. section 29, SPEEDS.				
Gear extension time	s	TBD	TBD	TBD
Gear extension time	s	TBD	TBD	TBD
Nose wheel steering angle.				
– Using steering wheel	deg	–	–	60
– Backing with reverse thrust	deg	–	–	45
The nose steering wheel must be kept depressed during backing with reverse thrust.				
Max speed for use of brakes with the anti-skid system off or inoperative	kts	–	–	40
Anti-skid must be on for takeoff and landing – unless takeoff and landing performance is corrected for anti-skid inoperative				

ENGINE & PROPELLER**WARNING**

- Positioning of the power lever(s) below the flight idle stop in flight is prohibited. Such positioning may lead to loss of airplane control or may result in an engine overspeed condition and subsequent loss of power.
- It is prohibited to activate BETA OVRD in flight.

Engine: Allison Engine Company AE 2100A turboprop.

Propeller: Six-bladed Dowty Aerospace Propellers, model (c) R 381-6-123-F/5.

OPERATING CONDITION	OPERATING LIMITS						
	POWER UNITS 1)	ITT °C	ENG rpm %	PROP rpm	OIL PRESSURE (p.s.i.)		OIL TEMP (°C) 2)
					ENGINE	PRO- PELLER	
START	—	816					—
G.I. – FEATHER		805	72		35–100	15–210	45–88
G.I. – RUN		805	72	770	35–100	110–210	45–88
Normal Take-Off Max 5 min. 4)	100 3)	816	100	1100	40–90	170–210	45–88
Maximum Take-Off Max 5 min. 4)	111	852	100	1100	40–90	170–210	45–88
Max. Continuous (OEI)	100	832	100	1100	40–90	170–210	45–88

NOTE

The above table shows the certificated limits and must not be used for setting power.

1) Power is limited to 30 PU (Power Units) when engine oil temp is below 45°C.

2) Up to 93°C allowed for 5 minutes.

3) For operations with engine bleed and engine anti-ice, see AFM section 5.2.

4) The 5 min. time limit also applies if flex is used.

APR operation

APR must be selected OFF for landing.